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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
GREAT FALLS DIVISION**

WESTERN ORGANIZATION OF
RESOURCE COUNCILS, MONTANA
ENVIRONMENTAL INFORMATION
CENTER, POWDER RIVER BASIN
RESOURCE COUNCIL, NORTHERN
PLAINS RESOURCE COUNCIL, SIERRA
CLUB, and NATURAL RESOURCES
DEFENSE COUNCIL,

Plaintiffs,

vs.

U.S. BUREAU OF LAND
MANAGEMENT, an agency within the
U.S. Department of the Interior; RYAN
ZINKE, in his official capacity as
Secretary of the U.S. Department of the
Interior, MICHAEL NEDD, in his official
capacity as Acting Director of the Bureau
of Land Management; and KATHARINE
MACGREGOR, in her official capacity as
Acting Assistant Secretary of Land and
Minerals Management of the U.S.
Department of the Interior,

Defendants.

Case No. CV-16-21-GF-
BMM

**MEMORANDUM IN
SUPPORT OF
PLAINTIFFS' MOTION
FOR SUMMARY
JUDGMENT**

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Exhibit 4: Intergovernmental Panel on Climate Change, *Contribution of Working Group I to the Fifth Assessment Report: The Physical Science Basis*, at 714 (Table 8.7)

GLOSSARY OF TERMS

APA	Administrative Procedure Act
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
Conservation Groups	Western Organization of Resource Councils, Montana Environmental Information Center, Powder River Basin Resource Council, Sierra Club, and Natural Resources Defense Council
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FLPMA	Federal Land Policy and Management Act
GHG	Greenhouse Gas
GtCO ₂ e	Gigatons of Carbon Dioxide Equivalent
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
NEPA	National Environmental Policy Act
RMP	Resource Management Plan

I. INTRODUCTION

The Bureau of Land Management's ("BLM") Miles City and Buffalo Field Offices comprise the northern and southern portions of a region known as the Powder River Basin, an area of stark beauty with rolling grasslands, badlands, and remote wilderness. SOF ¶2. The Basin stretches for more than 14 million acres from Wyoming's Bighorn Mountains, and the headwaters of the Tongue and Powder Rivers, north to the Yellowstone River in eastern Montana. *Id.* The Basin provides premier habitat for elk, mule deer, and pronghorn antelope, as well as threatened greater sage-grouse. *Id.*

The Powder River Basin is also one of our nation's most prolific energy producing regions, accounting for nearly 40% of all domestic coal production. SOF ¶3. BLM expects that over 20 years industry will mine approximately 11 billion tons of coal from the Miles City and Buffalo planning areas. SOF ¶17. The Basin also produces significant amounts of natural gas and oil. SOF ¶3.

Pursuant to the Federal Land Policy and Management Act ("FLPMA"), BLM must periodically complete a Resource Management Plan ("plan") to balance competing uses and guide how public lands will be managed for decades to come. In developing these plans, the National Environmental Policy Act ("NEPA") requires BLM to prepare an environmental impact statement ("EIS")

that considers a broad range of alternatives and takes a hard look at the environmental impacts of each alternative. Here, BLM violated this mandate.

In revising the Miles City and Buffalo Plans, BLM failed to consider any alternatives that would reduce the amount of coal available for leasing or require cost-effective measures to reduce methane emissions from oil and gas development. BLM further failed to take the hard look NEPA requires at the direct, indirect, and cumulative impacts of the fossil fuel development expected to occur under the plans. Federal Defendants' (collectively "BLM") approval of the Buffalo and Miles City plans was therefore arbitrary and capricious.

II. LEGAL BACKGROUND

A. National Environmental Policy Act

NEPA requires that all federal agencies prepare a "detailed statement" regarding all "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). This statement, known as an EIS, must, among other things, describe the "environmental impact of the proposed action," and evaluate alternatives to the proposal. *Id.* In an EIS, federal agencies must take a "hard look" at environmental impacts. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). This hard look must extend beyond the direct impact of proposed action, to consider "indirect" and "cumulative" effects as well. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8.

The agency must also evaluate reasonable alternatives to recommended courses of action, particularly where there are “unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E). Alternatives are the “heart” of the NEPA process, ensuring that agencies “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14.

B. BLM’s Planning and Management Framework

BLM develops resource management plans in accordance with FLPMA, NEPA, and associated planning regulations, 43 C.F.R. §§ 1600 *et seq.*, with additional guidance from BLM’s Land Use Planning Handbook (H-1601-1). The plans establish administrative priorities for all multiple use values, aiming to balance, guide, and constrain BLM’s management of these activities throughout the planning area. 43 U.S.C. § 1712 (c) (1)-(9). Plans operate on a broad-scale, and establish parameters for future management actions and subsequent site-specific implementation decisions. WO:4912-75966.¹ BLM must balance the use of public lands and minerals through its multiple use mandate, 43 U.S.C. § 1732(a), to prevent unnecessary or undue degradation, *id.* § 1732(b), and to

¹ Citations to the record are provided in the following format: [Record Folder Name]:[Record Document Number]-[Record Bates Number]. MC stands for “Miles City,” BUF stands for “Buffalo,” RMR stands for “Rocky Mountain Region,” and WO stands for “Washington Office.” Citations to the Statement of Undisputed Facts are provided as “SOF ¶____.”

minimize adverse impacts on the natural, environmental, scientific, cultural, and other values of public lands. *Id.* § 1732(d)(2)(A) Development of a plan's parameters is informed by the EIS's "hard look" at the direct, indirect, and cumulative impacts of various alternatives. 43 C.F.R. § 1601.0-6 (requiring development of an EIS when preparing a resource management plan).

III. STANDARD OF REVIEW

A party is entitled to summary judgment if "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). Agency compliance with NEPA is reviewed pursuant to the Administrative Procedure Act ("APA"), which provides that a court "shall hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). While the standard of review is deferential, courts must nonetheless engage in a "thorough, probing, in depth review" of the agency action. *Citizens of Overton Park v. Volpe*, 401 U.S. 402, 415 (1971). Courts must set aside agency decisions if the agency "failed to consider an important aspect of the problem," or if the agency's explanations run counter to evidence in the record. *League of Wilderness Defenders v. Forest Service*, 549 F.3d 1211, 1215 (9th Cir. 2008) (citation omitted).

IV. STANDING

Conservation Groups have standing to bring this action on behalf of their adversely affected members, *Hunt v. Wash. State Apple Adver. Comm’n*, 432 U.S. 333, 343 (1977), because each organization has at least one member that has demonstrated an injury that is both “traceable” to the challenged action and likely to be redressed by a favorable decision. *WildEarth Guardians v. U.S. Dep’t of Agric.*, 795 F.3d 1148, 1154 (9th Cir. 2015). “Environmental plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons for whom the aesthetic and recreational values of the area will be lessened by the challenged activity.” *Id.*

Conservation Groups’ members live, work, and recreate in areas where fossil fuel development will be allowed under the Buffalo and Miles City plans. Anderson Decl. ¶¶ 2, 6-8; Byron ¶¶ 4-8; Cushman ¶¶ 3-7; Punt ¶¶ 3-7, Sikorski ¶¶ 4-7, 17. The members identify specific areas they use that the plans leave open to coal, oil, and gas development, including split estate minerals underneath members’ property (Punt ¶ 4), lands nearby and visible from members’ property (Punt ¶¶ 4-6; Sikorski ¶¶ 6-7), and public lands and waters used for recreation, including Thunder Basin National Grassland, Fortification Creek, Bighorn Mountains (Anderson ¶¶ 6-8), Zook Mountain Wilderness Study Area (Punt ¶ 2), the Yellowstone and Tongue rivers (Byron ¶ 4; Cushman ¶¶ 4-5), and the Lewis

and Clark Trail (Byron ¶ 4; Cushman ¶ 4). Fossil fuel development permitted under the Plans would impact members’ interests in hunting (Punt ¶ 7), ranching (Punt ¶ 4), rafting (Cushman ¶4), cycling (Byron ¶ 4), and experiencing nature (Anderson ¶¶ 5, 6, 8; Cushman ¶¶ 6, 8; Sikorski ¶ 8).

Development of these areas depends, in part, on BLM’s decisions challenged here. If BLM limited the areas open to fossil fuel development, or placed restrictions on those operations in ways that, for example, reduced air emissions and water discharges, it would reduce the injuries to Conservation Groups’ members. Punt ¶¶ 4, 7; Sikorski ¶ 8; Byron ¶ 10; Cushman ¶ 10; Anderson ¶ 13. Because Conservation Groups allege procedural injury—violation of NEPA—a showing that BLM’s decision could affect their concrete injury is sufficient. *WildEarth Guardians*, 795 F.3d at 1154.

It is well settled that plaintiffs may challenge an agency’s climate analysis under NEPA by relying on aesthetic, non-climate injuries caused by the agency action. *WildEarth Guardians v. Jewell*, 738 F.3d 298, 306-307 (D.C. Cir. 2013); accord *MEIC v. BLM*, 615 F. App’x 431, 432-33 (9th Cir. 2015). Here, Conservation Groups’ aesthetic and recreational injuries “follow[] from [the] inadequate FEIS whether or not the inadequacy concerns the same environmental issue that causes their injury.” *WildEarth Guardians*, 738 F.3d at 307. A decision overturning BLM’s Buffalo and Miles City plans—on any grounds—would redress

these injuries “regardless whether the FEIS’s specific flaw relates to local or global environmental impacts.” *Id.*

V. ARGUMENT

A. BLM Failed to Consider a Reasonable Range of Alternatives

In approving the Miles City and Buffalo plans, BLM violated NEPA by refusing to consider any alternative that would have limited coal development, as well as by failing to consider reasonable alternatives with respect to oil and gas development.

The “heart of the environmental impact statement” is a rigorous exploration of alternatives to the proposed action. 40 C.F.R. § 1502.14. BLM must “provide a full and fair discussion of significant environmental impacts” in order to “inform decisionmakers and the public of the reasonable alternative which would avoid or minimize adverse impacts.” *Id.* §§ 1502.1, 1502.14; *accord California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982). It is insufficient for an EIS to only consider alternatives that “are essentially identical.” *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1039 (9th Cir. 2008).² “The existence of reasonable

² *Oregon Natural Desert Ass’n v. BLM (ONDA)*, 625 F.3d 1092, 1123-24 (9th Cir. 2008) (agency failed to consider alternatives “closing more than a fraction of the planning area to [off highway vehicle] use”); *Muckleshoot Indian Tribe v. USFS*, 177 F.3d 800, 813 (9th Cir. 1999) (rejecting “virtually identical alternatives”).

but unexamined alternatives renders an EIS inadequate.” *‘Ilio‘ulaokalani Coal. v. Rumsfeld*, 464 F.3d 1083, 1095 (9th Cir. 2006).

1. BLM’s Coal Alternatives Were Nearly Identical and Unlawful

The Miles City and Buffalo EISs failed to consider *any* meaningfully different alternatives with respect to coal. In each EIS, the coal management “alternatives” considered were *identical* to one another, carrying forward outdated management provisions that made vast amounts of coal available for leasing.

Under all alternatives, BLM anticipated identical amounts of coal production, acres disturbed by coal mining, and coal leases to be issued.

Miles City considered the following coal alternatives:

Miles City Coal Alternatives				
	Acres Available for Leasing	Tons Available for Leasing	Expected Production (tons)	Acres Disturbed
Alternative A	1.6 million	71 billion	926 million	13,000
Alternative B	1.6 million	71 billion	926 million	13,000
Alternative C	1.6 million	71 billion	926 million	13,000
Alternative D	1.6 million	71 billion	926 million	13,000
Alternative E	1.6 million	71 billion	926 million	13,000 ³

³ SOF ¶¶23-24.

Buffalo considered the following identical alternatives:

Buffalo Coal Alternatives				
	Acres Available for Leasing	Tons Available for Leasing	Expected Production (tons)	Coal Leases Issued
Alternative A	503,600	41 billion	10.2 billion	28
Alternative B	503,600	41 billion	10.2 billion	28
Alternative C	503,600	41 billion	10.2 billion	28
Alternative D	503,600	41 billion	10.2 billion	28 ⁴

Courts have repeatedly held that in developing land management plans, agencies must consider a range of alternatives that would protect varying amounts of land from environmentally damaging activity.⁵ BLM's complete failure to consider *any* such variation, in either EIS, in planning for coal mining was arbitrary and unlawful. *See, e.g., Muckleshoot Indian Tribe*, 177 F.3d at 813.

⁴ SOF ¶¶27, 29.

⁵ *See, e.g., Friends of Yosemite*, 520 F.3d at 1039 (EIS for management plan should have included alternatives that reduced user levels on river); *ONDA*, 625 F.3d at 1123-24 (agency should have considered alternatives that closed more than 0.77% of planning area to ORV use); *NRDC v. USFS*, 421 F.3d 797, 814 (9th Cir. 2005) (agency should have considered alternatives that allocated less than 50% of roadless areas in planning area to land use designations allowing development); *Block*, 690 F.2d at 768-69 (agency should have considered alternative allocating more than one-third of roadless areas to wilderness management); *Ctr. for Biological Diversity*, 746 F. Supp. 2d 1055, 1087-89 (N.D.Cal 2009) (agency should have considered alternatives that closed some portion of existing road network in planning area); *accord N.M. ex rel. Richardson v. BLM*, 565 F.3d 683, 709-11 (10th Cir. 2009) (EIS for management plan should have considered alternative closing planning area to future oil and gas leasing); *see also* Council on Environmental Quality ("CEQ"), Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026, 18027 (Mar. 17, 1981) (explaining that "[a]n appropriate series of alternatives might include dedicating 10, 30, 50, 70, 90, or 100 percent of the Forest to wilderness").

Alternatives that would have reduced acreage open to coal mining were within BLM's statutory authority and reasonable. "Where an action is taken pursuant to a specific statute, the statutory objectives of the project serve as a guide to determine the reasonableness of objectives outlined in an EIS." *Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 866 (9th Cir. 2004). In managing public lands, BLM must "take into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values." 43 U.S.C. § 1702(c). In planning for coal specifically, BLM uses a "screening" process that allows BLM to "eliminate ... coal deposits from further consideration for leasing to protect other resource values and land uses that are locally, regionally or nationally important." 43 C.F.R. § 3420.1-4(e)(3). "It is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses." *New Mexico*, 565 F.3d at 710.

Here, the purpose of each plan revision was to develop a land use plan based on multiple-use principles, SOF ¶¶7, 11, while also addressing conditions that had changed since the previous plan revisions, SOF ¶¶8, 11. Notably, each plan specifically identified the need to address the impacts of climate change and reduce greenhouse gas (GHG) emissions. SOF ¶¶ 9-10, 11. Both EISs recognized that "Secretarial Order 3289... establish[ed] a Department-wide, science-based

approach to increase understanding of climate change and to coordinate an effective response to impacts on managed resources.” SOF ¶¶10-11. BLM’s broad multiple-use mandate, and specific direction to respond to impacts of climate change under Secretarial Order 3289, gave the agency the authority and obligation to consider alternatives that would reduce coal-leasing. The agency’s justifications for omitting such alternatives are arbitrary.

For Miles City, BLM offered two justifications: (1) that it had previously determined what acreage and amount of coal was suitable for leasing in its prior management plans in 1985 and 1996; and (2) that it would consider alternatives limiting development on an individual parcel in response to future lease requests. SOF ¶25. Both arguments are unavailing.

First, BLM cannot rely on a prior analysis that does not account for new information. *See Sierra Forest Legacy v. Rey*, 577 F.3d 1015, 1021 (9th Cir. 2009) (“[W]here changed circumstances affect the factors relevant to the development and evaluation of alternatives, USFS must account for such change in the alternatives it considers.”); *W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1052 (S.D. Cal. 2017) (prior decades-old alternatives analysis insufficient). BLM admits that the prior coal analyses from the 1985 and 1996 management plans did not recognize or address climate change, which BLM acknowledges affects nearly all resources in the planning area. SOF ¶9. Thus, BLM’s stale, decades old

assessments of coal resources do not excuse the agency's complete failure to assess a reasonable range of coal alternatives in its 2015 EIS.

Second, BLM cannot defer consideration of alternatives to a parcel-by-parcel basis at the coal leasing stage. By law, BLM is required to assess what lands to make available for coal leasing *at the land use planning stage*. 43 C.F.R. § 3420.1-4 (e) ("The major land use planning decision concerning the coal resource shall be the identification of areas acceptable for further consideration for leasing..."). This assessment must also consider multiple-use interests. *Id.* § 3420.1-4(e)(3). A parcel-by-parcel approach violates NEPA by preventing informed public discussion of landscape-level planning for coal development. *Kern v. BLM*, 284 F.3d 1062, 1072 (9th Cir. 2002).

For Buffalo, BLM took a different, but equally meritless tack, stating that "[r]educing climate impacts and GHG emissions by limiting fossil fuel development was not identified as an issue through the scoping process and in development of the range of alternatives." SOF ¶30. In fact, Conservation Groups' scoping comments repeatedly asked BLM to reduce climate impacts by reducing coal development:

We encourage the BLM to seriously address the role coal has on climate change. CO₂ from coal fired power plants is the leading contributor to the rise of greenhouse gases.... [O]pening up more coal resources to development will set us back in the fight against global climate change.... Sierra Club asks that the BLM not expand coal mining operations.

SOF ¶31. Over one-hundred individuals sent similar scoping comments requesting BLM to “slow the pace of coal ... development.” *Id.* Moreover, BLM’s failure to evaluate any reduced coal alternative due to lack of public interest at the scoping stage is legally mistaken. *See, e.g., Nw. Res. Info. Ctr., Inc. v. Nat’l Marine Fisheries Serv.*, 56 F.3d 1060, 1067 (9th Cir. 1995) (NEPA does not allow an agency to limit its consideration of issues to those raised during the scoping period).

In a response to comments, Buffalo also mistakenly claimed that coal “screening” from 2001, which did not consider climate impacts from coal, met its duty to consider alternatives. SOF ¶32. Again, a prior analysis is insufficient in changed circumstances. *Sierra Forest Legacy*, 577 F.3d at 1021; *W. Watersheds*, 719 F.3d at 1052.

2. BLM Failed to Consider Alternatives That Would Require Measures To Reduce Methane Emissions from Oil and Gas Drilling

In approving both the Miles City and Buffalo plans, BLM violated NEPA by failing to consider an alternative that would require measures to reduce methane pollution from oil and gas development, such as frequent leak detection requirements or low- or no-bleed pneumatic controllers.⁶ In comments,

⁶ Use of frequent leak detection and repair and low- or no-bleed pneumatic controllers alone would address the largest sources of methane emissions in the

Conservation Groups identified these and numerous other emission reduction opportunities and their significant economic benefits. *See* SOF ¶¶33, 36. The U.S. Environmental Protection Agency (“EPA”) similarly recommended that BLM consider requiring methane mitigation. SOF ¶33. BLM’s refusal to consider an alternative that would mandate any of these mitigation measures in the planning areas was arbitrary.

Requiring methane mitigation measures on oil and gas development is, like limiting coal development, an alternative well within the scope and purpose of the plans to reduce greenhouse gas emissions. SOF ¶¶8-11. Such an alternative is also well within BLM’s resource management planning authority to determine not only the areas open to fossil fuel development, but also “the conditions placed on such development.” *N.M. ex rel. Richardson v. BLM*, 565 F.3d 683, 689 n.1 (citing 43 U.S.C. § 1712 (a)). Moreover, the agency’s multiple-use mandate, as well as the directive under Secretarial Order 3289, supplied BLM not only with the authority, but also the obligation to consider a methane mitigation alternative.

BLM argued that it was not required to consider alternatives mandating methane mitigation measures because (1) EPA regulations already limit methane emissions, and (2) BLM plans encourage the use of voluntary methane mitigation

Buffalo planning area. BLM forecasted that, together, wellhead “fugitives” (leaks) and pneumatic devices that “bleed” methane would account for over 95% of emissions for natural gas wells and 92% of emissions for coalbed methane wells in the Buffalo planning area in 2024. SOF ¶39.

measures. SOF ¶38. Both arguments are unsupported.

First, BLM has an independent duty to address methane waste under FLPMA, NEPA, and the Mineral Leasing Act. *See* 30 U.S.C. § 187 (requiring lease provisions preventing undue waste), *id.* at § 225 (requiring lessee to prevent waste). This responsibility includes addressing methane waste at the field office level during the resource management planning process. *See* 81 Fed. Reg. 83008, 83040 (Nov. 18, 2016) (“BLM agrees that the land use planning and NEPA processes are critical to achieving our simultaneous goals of responsible oil and gas development, land stewardship and resource conservation, and protection of air quality on (and reduction of air emissions from) Federal lands.”). Here, BLM was required to consider imposing additional pollution controls for development on federal lands; EPA regulations alone are not commensurate to the problem of methane waste.⁷

Second, BLM’s intent to encourage voluntary mitigation is not a substitute for taking a hard look at the environmental benefit that would foreseeably result from *requiring*, rather than merely requesting, additional specific methane mitigation measures. Voluntary methane mitigation measures are often

⁷ For example, the two mitigation measures identified above—frequent leak detection and repair and low- or no-bleed pneumatic controllers—go beyond the controls that EPA requires. EPA regulations do not apply to existing sources, do not require no-bleed pneumatic controllers other than for compressor stations, and only require intermittent leak detection and repair. SOF ¶34.

unsuccessful due to institutional inertia and skepticism.⁸ It may be that, after providing this comparison, BLM would have determined that mere encouragement would suffice, but NEPA requires BLM to actually perform and disclose this analysis.

B. BLM Failed to Take a Hard Look at Greenhouse Gas Pollution and Climate Change

In the Miles City and Buffalo plans, BLM violated NEPA by discussing the impact of the plans on climate change only by quantifying greenhouse gases directly emitted from production of fossil fuel resources. By failing to even acknowledge emissions that would foreseeably result from the use of fossil fuels extracted pursuant to the plans, by failing to consider the cumulative impact of BLM's management of other areas, and by understating the impact of each ton of foreseeable methane emissions, BLM improperly concealed the true climate effects of its plans from both decisionmakers and the public.

1. BLM Failed To Address the Foreseeable Indirect Effects of Consuming Fossil Fuels Extracted Under the Plans

BLM violated NEPA by failing to analyze or estimate the greenhouse gas emissions that will result from using fossil fuels extracted from the planning areas.

⁸ See Government Accountability Office, *Federal Oil & Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, GAO-11-34 at 24 (October 2011), available at <http://www.gao.gov/assets/320/311826.pdf> (Exhibit 1). The Court may take judicial notice of this and other factual documents under Federal Rules of Evidence 201(b)(2), (c).

All of the coal, oil, and gas developed under the plans will be transported, processed, and used for foreseeable purposes, largely electricity generation. SOF ¶46; BUF:6-843. NEPA requires BLM to look beyond the direct effects of the action at issue, to include consideration of “indirect” effects, which occur “later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). This specifically includes “growth inducing effects” and “related effects on air and water and other natural systems.” *Id.* Here, the end use or ‘downstream’ uses of fossil fuels produced under BLM’s plans all emit foreseeable amounts of greenhouse gases, which BLM must disclose and analyze. *High Country Conserv. Advocates v. U.S. Forest Serv.*, 52 F.Supp.3d. 1174, 1189-90 (D. Colo. 2014) (where agency action will enable additional coal mining, NEPA requires analysis of greenhouse gases emitted by additional coal use); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (where agency action will foreseeably increase coal consumption, NEPA requires analysis of consumption emissions). The record demonstrates that BLM has the information and tools needed for this analysis, and that these emissions vastly exceed the greenhouse gas emissions disclosed in the EISs. For example, BLM estimates that under the Buffalo plan, 10.2 billion tons of coal will be mined. SOF ¶13. BLM estimates that the process of mining this coal will emit 202 million tons

of carbon dioxide equivalent (“CO₂e”). BUF:6-2096, -2098, -2101, -2103;⁹ *see infra* page 27 (discussion of CO₂e). But as Citizen Groups explained, methodologies BLM has used elsewhere indicate that *burning* that coal would emit 16.9 billion tons of carbon dioxide—*more than 80 times the amount of greenhouse gas emissions BLM disclosed*. SOF ¶51. BLM’s justifications for omitting this analysis are legally and factually unsupported.

In Miles City, BLM claimed that it lacked information needed to analyze downstream use or combustion of fossil fuels extracted under the plan. BLM asserted that “GHG emissions from activities outside the planning area were not included because insufficient data exist to accurately quantify these emissions.” SOF ¶44. BLM has not, however, offered any explanation as to what information it would need, but that it does not have and cannot obtain, in order to perform this analysis. *Cf.* 40 C.F.R. § 1502.22 . Moreover, the records for Miles City and Buffalo demonstrate that, for both plans, the agency had ample information to reasonably predict the amounts of greenhouse gases that will be emitted by use of coal, oil, and gas extracted under the adopted plans.

Most importantly, BLM has prepared “reasonably foreseeable development” analyses for both planning areas, estimating the amount of coal, oil, and natural gas

⁹ These four tables, one for each alternative, list annual CO₂e for coal at 10,106,906 tons per year. 202 million tons was arrived at by multiplying 10.1 million tons per year by 20 years, the duration of the planning periods.

likely to be extracted during the planning periods. SOF ¶12. Indeed, both plans state that all coal production is likely to come from a small handful of already operating mines (five mines in Miles City, twelve in Buffalo), and, for Miles City, BLM even estimated annual production at each mine down to the ton. SOF ¶¶14-16.

BLM has previously determined that it can estimate the amount of greenhouse gases indirectly emitted by use of Powder River Basin coal on the basis of the amount of coal delivered to market and a “conversion factor” expressing the known amount of CO₂ emitted from burning a ton of coal. SOF ¶48.¹⁰ BLM could similarly estimate greenhouse gas emissions from downstream use of oil and gas based, principally, on expected levels of production, as explained in a report submitted by Conservation Groups. SOF ¶53. BLM offered no criticism of that report’s methodology. Because these methods of analysis are available, BLM “cannot—in the same FEIS—provide detailed estimates of the amount of coal to be mined and simultaneously claim that it would be too speculative to estimate [end use] emissions.” *High Country*, 52 F.Supp.3d. at 1196-97.

Thus, in the Miles City EIS, BLM failed to support its assertion that it could not reasonably foresee emissions resulting from downstream fossil fuel use, and in

¹⁰ Conservation Groups also directed BLM to a U.S. Energy Information Administration webpage listing “emission coefficients” that BLM could similarly use to calculate CO₂ (carbon dioxide) emissions from coal combustion. SOF ¶50.

fact, the record squarely refutes this assertion. BLM's ability to perform this analysis was further demonstrated by the recent draft EIS it prepared for the Uncompahgre Resource Management Plan, which provides a table showing the "maximum annual indirect greenhouse gas emissions" for coal, oil, and gas produced in the planning area, based on annual production levels and U.S. Energy Information Administration conversion factors.¹¹ BLM's Uncompahgre analysis used the type of methods and inputs that Citizen Groups urged BLM to use here, yet BLM failed to articulate a reasonable basis for failing to conduct a similar greenhouse gas analysis for these plans.

Similarly, the Buffalo EIS provided no justification for omitting an analysis of indirect emissions. An internal email from Wyoming BLM staff acknowledges that emissions from the end use of extracted fossil fuels fall within NEPA's purview, but wrongly contends that analysis of these emissions can be postponed to the leasing stage. *See* SOF ¶45. Thus, BLM appears to have silently adopted an informal position of categorically deferring analysis of downstream emissions. However, NEPA mandates that agencies "shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions

¹¹ BLM, Uncompahgre Field Office, Draft Resource Management Plan and Environmental Impact Statement at 4-42, T. 4-11 (May 2016), *available at* https://eplanning.blm.gov/epl-front-office/projects/lup/62103/82336/97334/Vol_II_UFO-DRMP-2016_web.pdf (Exhibit 2).

reflect environmental values.” 40 C.F.R. § 1501.2. “If it is reasonably possible to analyze the environmental consequences in an EIS for an RMP [Resource Management Plan], the agency *is required* to perform that analysis.” *Kern*, 284 F.3d at 1072 (emphasis added). Analysis may be deferred only when it is impossible to prepare it until a later stage. *Id.*; accord *N. Alaska Envtl. Ctr. v. Kempthorne*, 457 F.3d 969, 973 (9th Cir. 2006) (approving deferral of analysis of certain site-specific impacts). As the Ninth Circuit has explained:

If an agency were able to defer analysis of discussion of environmental consequences in an RMP, based on a promise to perform a comparable analysis in connection with later site-specific projects, no environmental consequences would ever need to be addressed in an EIS at the RMP level if comparable consequences might arise, but on a smaller scale, from a later site-specific action proposed pursuant to the RMP.

Kern v. BLM, 284 F.3d at 1072. BLM had at its disposal all of the information it needed to analyze the downstream emissions resulting from plan implementation, and thus NEPA forbids BLM from deferring that analysis until a later stage. *Cf.* 40 C.F.R. § 1502.22.

2. BLM Failed To Take a Hard Look at Cumulative Climate Impacts of BLM’s Fossil Fuel Management.

BLM failed to address the cumulative impacts on the climate of the foreseeable fossil fuel development on BLM-managed land. NEPA requires a detailed analysis of “cumulative” effects, which are “the incremental impact of the action when added to other past, present, and reasonably foreseeable future

actions.” 40 C.F.R. §§ 1508.7, 1508.25(c). Analysis of cumulative impacts protects against “the tyranny of small decisions,” *Kern*, 284 F.3d at 1078, by confronting the possibility that agency action may contribute to cumulatively significant effects even where impacts appear insignificant in isolation. 40 C.F.R. §§ 1508.7, 1508.27(b)(2). Here, BLM violated this requirement by failing to consider the cumulative, incremental contribution of greenhouse gas emissions from the Miles City and Buffalo plans, respectively, *added* to other past, present and reasonably foreseeable BLM-managed fossil-fuel extraction emissions.

The scope of the cumulative impacts inquiry must include other projects potentially impacting the same resources. For example, the Ninth Circuit has indicated that, in reviewing a land exchange that would increase air pollution in the Las Vegas Valley, BLM must consider the cumulative impact of all other foreseeable land exchanges in that region. *Hall v. Norton*, 266 F.3d 969, 978 (9th Cir. 2001). Similarly, in reviewing a timber sale that risked spreading a fungus harmful to cedars in Oregon, BLM violated NEPA by confining its analysis to the boundaries of the proposed sale; as the Ninth Circuit explained, NEPA required analysis of the cumulative impact of foreseeable sales throughout the region. *Kern v. BLM*, 284 F.3d at 1078; *see also Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1215 (9th Cir. 1998) (Forest Service, in approving

timber sale for salvage after fire, required to consider cumulative impact of foreseeable sales across 140-square mile burned area).

“The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172,1217 (9th Cir. 2008). BLM acknowledged that “impacts on climate change are influenced by [GHG] emission sources from around the globe.” BUF:6-2093; *see also* MC:7-3078. Despite this acknowledgment, BLM argued here that the impacts of the plan revisions were individually insignificant when measured against cumulative emissions, while failing to analyze the cumulative impacts of plan implementation on climate change.

Specifically, BLM argued that “emissions under the highest-emitting [Miles City] alternative would be a small percentage of Montana, United States, and global emissions,” MC:7-3078, and that “BLM can only reasonably quantify and disclose GHG emissions for the alternatives and put that estimation into the context as far as a percentage of the climate change that is occurring,” BUF:6-4102. This conclusion is unsupported and contains no discussion of the cumulative impact of BLM’s management of fossil fuel extraction across the eight resource management plans simultaneously revised in the Rocky Mountain Region, or across the 700 million acres of mineral estate that BLM manages. Instead, BLM

looked only at the climate impacts of each individual plan in isolation, without any discussion of those impacts when added to greenhouse gas emissions from the other areas that BLM manages. *See* 40 C.F.R. § 1508.27(b)(7) (requiring cumulative analysis even for impacts that are “individually insignificant but cumulatively significant”). Without considering “the combined effects” of such management, BLM cannot make an informed decision “whether, or how, to alter” the plans “to lessen cumulative impacts.” *Muckleshoot Indian Tribe*, 177 F.3d at 810.

At a minimum, BLM had the available data to quantify and analyze the predicted cumulative emissions under the eight plans simultaneously revised in the Rocky Mountain Region. RMR:1134-7951, -7967 (Record of Decision). Together, these revised plans span nearly 10 million acres. *Id.* BLM entirely ignored this broad perspective; indeed, BLM did not even address the cumulative impact of the Buffalo and Miles City plans, under which BLM expects that industry will mine approximately 11 billion tons of coal, SOF ¶¶17, and drill approximately 18,000 producing oil and gas wells, SOF ¶¶18-19. BLM’s refusal to provide a cumulative impacts analysis that included BLM’s foreseeable management of fossil fuels outside the boundaries of individual planning areas violated NEPA.

Moreover, BLM cannot simply dismiss such cumulative effects analysis as “[i]mpractical.” BUF:9-5012 (Protest Resolution). The record squarely contradicts

BLM's assertion that "insufficient data exist[s] to accurately quantify" "emissions from activities outside the [individual] planning area[s]." SOF ¶44. Conservation Groups explained that BLM had the tools available to evaluate the cumulative emissions resulting from fossil fuel development across the lands BLM manages. SOF ¶¶53-54. And BLM had available information about expected greenhouse gas emissions from each of the simultaneously revised plans that it could have used to quantify cumulative emissions.

This analysis would have enabled BLM take a hard look at the significance and severity of the cumulative emissions coupled with plan implementation. This is precisely the look that NEPA requires at the planning stage when the agency is assessing how much of the public's land to make available to coal, as well as to oil and gas leasing.

One of the measuring standards available to BLM for analyzing the magnitude and severity of BLM-managed fossil fuel emissions is to apply those emissions to the remaining global carbon budget. A "carbon budget" offers a cap on the remaining stock of greenhouse gases that can be emitted while still keeping global average temperature rise below scientifically researched warming thresholds¹²—beyond which climate change impacts may result in severe and

¹² The Paris Agreement states that global warming must be held "well below 2°C above pre-industrial levels" with a goal to "limit the temperature increase to 1.5°C." U.N. Framework Convention on Climate Change, Conference of the

irreparable harm to the biosphere and humanity. SOF ¶¶57-59. The record shows that the remaining global carbon budget to stay under the 2°C warming threshold is approximately 800 gigatons of carbon dioxide equivalent (“GtCO₂e”), while fossil fuels companies and state actors hold fossil fuel reserves consistent with approximately 2,795 GtCO₂e of emissions. SOF ¶¶60-61.

A second measure available to analyze cumulative impacts to climate was the social cost of carbon protocol (“protocol”), which BLM failed to utilize. *See* 40 C.F.R. § 1508.8(b), 1502.16(a)-(b) (requiring BLM to disclose the “ecological[,] . . . economic, [and] social” impacts of its actions, including an assessment the “significance” of the impacts). The protocol is an estimate of the global economic harm of carbon dioxide emissions, expressed as a range of dollar values. SOF ¶¶ 62-64. Critically, the protocol not only contextualizes costs associated with climate change, but can also be used as a proxy for understanding climate impacts and to compare alternatives. BLM does not assert that the social cost of fossil fuel development is \$0, but “by deciding not to quantify the costs at all, the agencies effectively zeroed out the costs in its quantitative analysis.” *High Country*, 52 F.Supp.3d at 1192; *see also CBD*, 538 F.3d at 1200 (noting that while there is a range potential social cost figures, “the value of carbon emissions reduction is

Parties, Adoption of the Paris Agreement, Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015), *available at* http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf (Exhibit 3).

certainly not zero.”). BLM’s failure to apply available tools that could be utilized to analyze the cumulative significance and severity of planning area emissions and associated climate implications deprived the public of important information on the cumulative greenhouse gas emissions and true climate implications of plan implementation. *See ONDA*, 625 F.3d at 1099-100 (requiring agencies to “take a ‘hard look’ at how the choices before them affect the environment, and then to place their data and conclusions before the public”).

3. BLM Understated the Impacts of Methane Emissions

BLM estimated that the Buffalo and Miles City plans would lead to 500,000 and 3,000 tons per year of methane emissions, respectively. SOF ¶65. BLM understated the impact of these emissions by arbitrarily using an outdated estimate of methane’s global warming potential (“GWP”)—the amount of warming caused by each ton of methane. Methane is a much more potent greenhouse gas than carbon dioxide. SOF ¶66. A GWP is used to translate a ton of methane into “carbon dioxide equivalent,” or “CO₂e.” SOF ¶67. That is, methane’s GWP estimates how many tons of carbon dioxide would be needed to produce the same amount of global warming as a single ton of methane. *Id.* In both the Miles City and Buffalo plans, BLM used a methane GWP of 21, purportedly reflecting methane’s impact over 100-year timeframes. SOF ¶69(b), 71. This estimate, which dates back to 1996, had been repeatedly superseded; more recent studies estimate

that methane’s impact on the climate is 20 to 70 percent higher. SOF ¶69. By using outdated science, BLM arbitrarily and drastically underestimated the impact of the methane emissions that would occur under the plans. In addition, BLM unlawfully considered only the 100-year time horizon for emissions, giving short shrift to near-term impacts—*e.g.*, warming that will occur during the 20-year planning periods.

NEPA requires BLM to ensure the “scientific integrity[] of the discussions and analyses in [EISs].” 40 C.F.R. § 1502.24, *accord* 40 C.F.R. § 1500.1(b) (requiring “accurate scientific analysis”). BLM therefore requires “[u]se [of] the best available science to support NEPA analyses.” BLM NEPA Handbook H-1790-1 at 55, BUF:227-22719; *see* MC:8-4069. An agency violates NEPA where its analysis is based on a factual inaccuracy. *Oregon Nat. Desert Ass’n v. Jewell*, 840 F.3d 562, 570 (9th Cir. 2016).

Nowhere here did BLM argue that the GWP estimate of 21 represented the “best available science.” Nor could BLM have done so. This estimate was derived from the 1996 Second Assessment Report of the Intergovernmental Panel on Climate Change (“IPCC”). SOF ¶73(a). The IPCC is a multinational scientific body that provides peer-reviewed assessments of the overarching conclusions about the state of climate science. SOF ¶69(a). At all times relevant here, the IPCC and EPA agreed that the 1996 assessment sorely understated methane’s actual

impact. Notably, the IPCC adopted a 100-year GWP that was twenty percent higher in 2007, six years before the draft EISs were released, SOF ¶¶69(c), and IPCC further increased its estimate in September 2013, more than 18 months before the final EISs were released. SOF ¶¶69(e).

While both the Miles City and Buffalo EISs attribute the GWP of 21 to EPA, BUF:6-2091, MC:7-2712, at the time the final EISs were published, EPA was not using this value—and even before then, EPA recognized that this value was not the best available science. The Miles City EIS states that this is the value “used ... under 40 Code of Regulations Part 98 as of November 1, 2013.” MC:7-2712. As BLM recognized, EPA had proposed to update that regulation to use a higher value before even the *draft* Miles City and Buffalo EISs was published, *id.*; as of November 30, 2013, that rule adopted IPCC’s 2007 estimate, a methane GWP of 25. 78 Fed. Reg. 71,904, 71,911 (Nov. 29, 2013). Moreover, EPA has consistently explained that the most recent IPCC reports reflect the best available science. SOF ¶¶73(c)-(d). The record therefore refutes BLM’s statement that the GWP of 21 is “the EPA GWP[],” Buf:6-2091, and no EPA document supports the conclusion that at the time the EISs were developed, using that estimate would provide “accurate scientific analysis.” 40 C.F.R. § 1500.1(b).

BLM defends its improper use of an incorrect GWP as necessary to “allow[] for consistent comparisons with state and national GHG emission inventories.”

MC:7-2712, *see also* MC:7-3078 (juxtaposing Miles City plan emissions with inventories of all Montana, U.S., and global emission), BUF:6-2093 (juxtaposing Buffalo emissions with Wyoming emissions). NEPA's central command is for agencies to analyze and disclose the effects of their proposed actions. 40 C.F.R. § 1502.1. BLM must use the best available science to evaluate the impact of foreseeable methane emissions. BLM cannot omit this honest evaluation, and present an analysis that—according to the scientific consensus—understates impacts, simply to facilitate comparison to other emission inventories that also understate impacts. *See* Buf:1660-98326 (EPA comment that “a comparison of planning area emissions to state and global emissions does not provide meaningful information for a planning level analysis.”), MC:316-13994 (EPA comment that the Miles City EIS “compares the GHG emissions to state, national and global emissions; we believe this approach does not provide meaningful information for a planning level analysis.”). Moreover, using an accurate GWP estimate would not preclude comparison with existing inventories. In particular, both EISs cite EPA estimates of nationwide emissions, *see* SOF ¶74; those EPA documents provide calculations of nationwide greenhouse gas emissions that use the most recent IPCC GWP estimates, even when these inventories also provide alternate calculations using older estimates. SOF ¶74.

BLM separately violated NEPA by failing to calculate methane's 20-year GWP and, instead, relying exclusively on a 100-year timeframe. NEPA requires analysis of methane's near-term impact. 40 C.F.R. § 1508.27(a). Methane is much more potent than carbon dioxide and persists in the atmosphere for a much shorter period of time. SOF ¶68. The IPCC's calculations of methane's GWP account for this changing capacity to warm the atmosphere over time, and use both 100-year and 20-year time scales to measure methane's impact. In September 2013, IPCC adopted an estimate of the 20-year GWP for methane of 87. BUF:1996-130451.¹³ BLM must analyze climate impacts in the near-term if the agency is to consider measures to avoid significant global warming. A near-term analysis is also consistent with the 20-year planning horizon for the plans. SOF ¶12. BLM's omission of a near-term analysis of the methane emissions generated over the life of the plan is arbitrary and capricious because it ignored important aspects of the issue of global warming and failed to articulate the reason why it omitted this important information, contrary to the evidence it had before it at the time it made its decision.

The most recent IPCC estimates of the GWP for methane from fossil fuels are, even on the 100-year timeframe, 40 to 70% higher than the values used by BLM. SOF ¶69. BLM's decision to use outdated science was arbitrary and led

¹³ Citing to IPCC, *Contribution of Working Group I to the Fifth Assessment Report: The Physical Science Basis*, at 714 (Table 8.7) (Sept. 2013) (Exhibit 4).

BLM to drastically understate the impact of anticipated methane emissions.

C. BLM Failed to Consider Cumulative Impacts on Air Quality.

In the Miles City and Buffalo plans, BLM violated NEPA by failing to analyze the combined air quality impacts of coal, oil and gas development on public health and on non-health related values, such as visibility and vegetation. BLM also failed to analyze the impacts from non-BLM emission sources in the region, including the largest coal-fired power plant in the region.

First, BLM failed to analyze the impacts of air emissions that BLM admits harms air quality. BLM acknowledged that emissions from coal mining and fluid mineral development together represent the largest air emissions sources for each of the planning areas. SOF ¶75. Yet BLM failed to conduct any meaningful cumulative impact analysis of these harmful emissions, which are particularly important to consider at the planning level, when BLM has the opportunity to take a region-wide look at projected impacts. In the Miles City EIS, BLM includes only a cursory and conclusory paragraph for each alternative that notes that “cumulative pollutant concentrations are expected to be less than the NAAQS [National Ambient Air Quality Standards under the Clean Air Act].” SOF ¶76. Similarly, in the Buffalo EIS, BLM notes that most pollutant concentrations are expected to be less than the NAAQS, except that ozone concentrations will become an important

issue in the planning area if EPA lowers the NAAQS for ozone—an outcome that occurred just months after the Buffalo FEIS was published. SOF ¶¶76-77.

BLM's cursory assessments do not satisfy NEPA's hard look mandate. BLM improperly disregarded impacts that occur at or below the NAAQS. For example, BLM ignored the best science that shows that children, asthmatics, and even healthy adults exercising or working outdoors suffer impacts from ozone at the level of the NAAQS that was in effect when the EISs were published. SOF ¶78. Moreover, BLM failed to address any non-health related air quality impacts, such as impacts to visibility and vegetation. SOF ¶79.

Second, BLM failed to analyze the cumulative impacts of plan implementation along with existing regional air pollution sources such as coal-fired power plants. Although BLM acknowledged that coal-fired power plants were relevant to its cumulative impact analyses for air quality, MC:7-3894, BLM nonetheless excluded existing sources from its cumulative effects analysis, such as Colstrip, a large power plant located within the Miles City Planning Area and directly north of the Buffalo Planning Area. MC:816-33704; BUF:1407-91717. Colstrip causes significant air pollution, including emissions of sulfur dioxide that may exceed the NAAQS. MC:816-33704 to -33705. By omitting significant sources of regional air emissions, BLM underestimated the cumulative impact of plan implementation on regional air quality in violation of NEPA.

CONCLUSION

For the foregoing reasons, Conservation Groups respectfully request that the Court declare BLM's approval of the Buffalo and Miles City plans and EISs arbitrary and capricious.

Respectfully submitted this 14th day of July, 2017.

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CERTIFICATE OF SERVICE

I, the undersigned counsel of record, hereby certify that on this 14th day of July, 2017, I filed a copy of this document electronically through the CM/ECF system, which caused all parties or counsel to be served by electronic means as more fully reflected on the Notice of Electronic Filing.

/s/ Laura King
Laura King

CERTIFICATE OF COMPLIANCE

I, the undersigned counsel of record, hereby certify that this brief is double-spaced, has a typeface of 14 points, and contains 7,862 words, excluding caption, certificates of service and compliance, table of contents and authorities, and exhibit index. I relied on Microsoft Word to obtain the word count.

/s/ Laura King
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